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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/679,882 | 10/05/2000 | Hisanori Nakajima | Q61079 | 7624 |
| 7590 | 09/28/2005 | | EXAMINER | |
| SUGHRUE MION ZINN MACPEAK SEAS PLLC 2100 Pennsylvania Avenue N W Washington, DC 20037-3213 | | | PHAM, THIERRY L | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2624 | |

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/679,882 | NAKAJIMA ET AL. |
| | Examiner Thierry L. Pham | Art Unit 2624 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 20 July 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,6,9,11-20 and 40-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,6,9,11-20 and 40-42 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

- This action is responsive to the following communication: Reply to Restriction Requirement filed on 7/20/05.
- Replacement Drawing Sheets for figs. 12-13 filed on 12/21/04 have been considered and entered by the examiner.
- Amendment to the specification (including title) filed on 12/21/05 has been considered and entered by the examiner.
- Claims 1, 6, 9, 11-20, and 40-42 are pending; claims 2-5, 7-8, 10, and 21-39 have been canceled.

Election/Restrictions

- Applicant's election without traverse of Invention I (claims 1, 6, 9, 11-20, 40-42) in the reply filed on 7/20/05 is acknowledged.

Claim Rejections - 35 USC § 101

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

Claims 6, 9, and 41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed invention is a computer related invention. The Computer-Implemented Invention Guidelines issued by the U.S. Patent and Trademark Office describe the procedures for examining such inventions.

The first step is to determine whether the invention as defined by the claims falls within one of the three following categories of unpatentable subject matter: (1) Functional descriptive material such as a data structure *per se* or a computer program *per se*, (2) Non-functional descriptive material such as music, literary works or pure data, embodied on a computer readable medium; or (3) A natural phenomenon such as energy or magnetism. The invention as defined by the claims is not a natural phenomenon or pure data, however, it is a computer program *per se*,

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which does not mount/store on any computer-readable medium; therefore, these claims are rejected for non-statutory basis.

Medium as cited in claims 6, 9, and 41 are directed to a non-statutory subject matter, for example, storage medium can be interpreted as a “paper media” containing printed computer program instructions. The examiner recommends the applicants to replace “storage medium” with “computer readable medium” so it complies with 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 recites the limitation “said registering roller and said feeding roller” in second lines and third lines of claim 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 9, 11, and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kageyama et al (US 5954436), and in view of Sato (US 6065397).

Regarding claim 1, Kageyama discloses a printer control unit (printer controller, fig. 1) for issuing a command to a printer that is able to perform double-side printing (double-side printing, fig. 1), comprising:

- mode designation receiving means (printer controller receives printing commands from host computer, fig. 1) for receiving the designation of double-side printing mode (single/double side

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printing mode from host computer, fig. 1) in which both surfaces of a printing medium are targeted to be printed;

- command generating means (command processing unit, fig. 1) for generating a feed command of feeding the printing medium, in the case where said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later (second-half page is printed when the waiting time is released, col. 2, lines 65-67 to col. 3, lines 1-10) out of a pair of images to be printed on both surfaces of said printing medium; and
- command issuing means (command processing unit, fig. 1) for issuing said feed command (determine when to print the second-half page (i.e. double-side printing), col. 3, lines 1-10 and col. 7, lines 15-25) generated by said command generating means as said command to be supplied to said printer.

Kageyama fails to expressly teach and/or suggest a command generating means for generating a feed command for correcting the timing of feeding the printing medium.

Sato, in the same field of endeavor for printing, teaches a command generating means for generating a feed command for correcting the timing of feeding the printing medium (printer control unit 15 of fig. 9 issues a feed command for correcting the timing of feeding the printing medium 13, col. 11, lines 30-50 and col. 13, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer control unit of Kageyama to include a command generating means for generating a feed command for correcting the timing of feeding the printing medium as taught by Sato because of a following reason: (•) adjusting feed timing based upon type of print media helps reduce powers and costs (Kato, col. 8, lines 55-65); (•) adjusting feed timing to allow print inks to dry before rotate the print media for reverse printing; thereby, reducing image bleeding and to assure excellent print quality.

Therefore, it would have been obvious to combine Kageyama with Sato to obtain the invention as specified in claim 1.

Regarding claim 6: Claim 6 recites limitations that are similar and in the same scope of invention as to claim 1 above except computer readable memory for storing computer programs.

All computers/printers have some type of computer readable medium (i.e. RAM) for storing computer programs, hence claim 6 would be rejected using the same rationale as in claim 1.

Regarding claim 9, Sato further teaches wherein said program makes said printer control unit generate a command for rotating said registering roller (registration roller 16, fig. 7) and said feeding roller (feeding roller, col. 11, lines 40-50) at a rotational speed in accordance with a type of said printing medium (col. 11, lines 30-50) as a feed command for feeding said printing medium for printing said second image.

Regarding claim 11, Kageyama discloses a printer control unit (printer controller, fig. 1) for issuing a command to a printer that is able to perform double-side printing (double-side printing, fig. 1), comprising:

- mode designation receiving means (printer controller receives printing commands from host computer, fig. 1) for receiving the designation of double-side printing mode (single/double side printing mode from host computer, fig. 1) in which both surfaces of a printing medium are targeted to be printed;
- command generating means (command processing unit, fig. 1) for generating a feed command of feeding the printing medium, in the case where said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later (second-half page is printed when the waiting time is released, col. 2, lines 65-67 to col. 3, lines 1-10) out of a pair of images to be printed on both surfaces of said printing medium; and
- command issuing means (command processing unit, fig. 1) for issuing said feed command (determine when to print the second-half page (i.e. double-side printing), col. 3, lines 1-10 and col. 7, lines 15-25) generated by said command generating means as said command to be supplied to said printer.

Kageyama fails to expressly teach and/or suggest a command generating means for generating a feed command for delaying the start of feeding of the printing medium.

Sato, in the same field of endeavor for printing, teaches a command generating means for generating a feed command for correcting the timing of feeding the printing medium (printer

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control unit 15 of fig. 9 issues a feed command for correcting the timing of feeding the printing medium 13, col. 11, lines 30-50 and col. 13, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer control unit of Kageyama to include a command generating means for generating a feed command for correcting the timing of feeding the printing medium as taught by Sato because of a following reason: (•) adjusting feed timing based upon type of print media helps reduce powers and costs (Kato, col. 8, lines 55-65); (•) adjusting feed timing to allow print inks to dry before rotate the print media for reverse printing; thereby, reducing image bleeding and to assure excellent print quality.

Therefore, it would have been obvious to combine Kageyama with Sato to obtain the invention as specified in claim 11.

Regarding claims 40-41, Sato further teaches the print control unit according to claim 1, wherein correcting the timing of feeding the printing medium comprises adjusting a timing lag (adjusting feed timing, col. 11, lines 20-50) for arriving to a print head of the printing medium having the first image printed on one surface.

Claims 12-20, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kageyama and Sato as applied to claim 11 above, and further in view of Inoue et al (US 6273535).

Regarding claim 12, Kageyama does not disclose wherein a printer control unit further comprising detection means for detecting information on the quantity of ink used for printing a first image which is to be printed ahead of the other one of said pair of images.

Inoue, in the same field of endeavor for printing, teaches a printer control unit further comprising detection means (sensing print conditions, figs. 5-9) for detecting information on the quantity of ink used (amount of ink used, fig. 5) for printing a first image which is to be printed ahead of the other one of said pair of images.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kageyama as per teachings of Inoue because of a following reason: (•) to

improve operating efficiency by delaying the start feeding the print medium for printing second image (e.g. reverse side) because it allows more time for inks to dry; by doing so, it allows bleeding of inks of an outputted image.

Therefore, it would have been obvious to combine Kageyama and Sato with Inoue to obtain the invention as specified in claim 12.

Regarding claim 13, Sato further teaches the printer control unit further comprising: printing condition storing means for storing information on waiting times (delay time, col. 11, lines 40-65) in correspondence with at least one of a type of printing medium (kind of paper, fig. 8) and a type of ink, wherein said command generating means reads the waiting time (delay time, col. 11, lines 40-65) corresponding to at least one of the type of printing medium (type of print media, fig. 8) on which said second image is to be printed and the type of ink (type of inks used as taught by Inoue) used for printing the first image paring with said second image, from said printing condition storing means, and generates the command for delaying the start of feeding (delaying the start of feeding the printing medium, col. 11, lines 40-65) the printing medium for printing said second image as long as the period of time corresponds to said waiting time.

Regarding claims 14-15, Sato further teaches wherein said command generating means reduces the waiting time (col. 11, lines 40-65) before starting feeding the printing medium for printing said second image according to the time elapsed since printing of said first image is finished.

Regarding claims 16-20, Sato further teaches wherein said printer is a printer of a type which suspends advancement (col. 11, lines 40-65) of the printing medium, which is fed by the rotation of a feeding roller to a registering roller (registration roller 16, fig. 7) located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in the direction to move said printing medium backward and rotating said feeding roller according to the rotation of said registering roller, into the command for delaying the start of feeding (col. 11, lines 40-65) the printing medium for printing said second image.

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Regarding claim 42, Inoue further teaches wherein said delaying the start of feeding the printing medium for printing the second image is based on a quantity of ink used (fig. 5) in the printing the first image on the printing medium.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

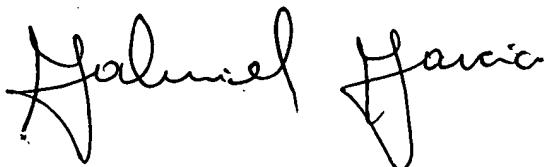
- US 5836706 to Rube, teaches a media handling system for duplex printing.
- US 6012809 to Ikeda et al, teaches a media handling system for duplex printing including mode designating means for designating double-side or single-side mode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 272-7439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham



GABRIEL GARCIA
PRIMARY EXAMINER